

A.) AMENDMENTS TO THE CLAIMS:

1. (currently amended) A method of ~~operating a router~~ routing data packets in a high-speed access network infrastructure having a plurality of intermediate servers, and at least one managed access point router connected to that interfaces with a plurality of service networks, which are external to the high-speed access network infrastructure, the method comprising:

providing the plurality of intermediate servers to route local and non-local data packets within the high-speed access network infrastructure using only destination-based packet forwarding;

providing the at least one managed access point server to receive only non-local packets from the plurality of intermediate servers and to route the non-local data packets to the plurality of service networks using only source address-based policy routing;

assigning a network address to a customer of the high-speed access network infrastructure, the network address based on a subscription of the customer to a service network, wherein the address is assigned from a list of network addresses that are dynamically allocated only to customers of the high-speed access network infrastructure that are subscribers of the service network;

receiving a local data packet from the customer at one of the plurality of intermediate servers;

forwarding the local data packet within the high-speed access network infrastructure using only destination-based packet forwarding;

receiving a non-local data packet from the customer at one of the plurality of intermediate servers;

forwarding the non-local data packet to a managed access point router using only destination-based packet forwarding;

receiving an incoming ~~the non-local data~~ packet with a source address at the managed access point router;

comparing the a source address of the incoming non-local data packet to the list of network addresses allocated to subscribers of services provided by the plurality of service networks; and

forwarding the packet to a router in the service network only when the source address matches a network address ~~allocated to a subscriber of services provided by a service network, forwarding the packet to a router in the service network based only on the source address from the list.~~

2. (currently amended) The ~~invention~~ method of claim 1 wherein the source address of the incoming non-local data packet is assigned to a network access device associated with the ~~customer subscriber of services provided by the service network.~~

3. (currently amended) The ~~invention~~ method of claim 1 wherein the service networks utilize the Internet Protocol and wherein the network addresses are Internet Protocol addresses.

4. (previously presented) The invention of claim 3 wherein the plurality of service networks are operated by different Internet Service Providers.

5. (previously presented) The invention of claim 3 wherein the plurality of service networks offer access to different Internet Protocol-based services.

6. (currently amended) The ~~invention~~ method of claim 3 wherein the high-speed access network infrastructure comprises a hybrid fiber coaxial network.

7. (currently amended) The ~~invention~~ method of claim 6 wherein the source address of the incoming packet identifies a network access device attached to the hybrid fiber coaxial network with a cable modem.

8. (currently amended) A method of ~~operating~~ routing data packets in a high-speed access network infrastructure comprising a plurality of routers and connected to a plurality of service networks having a plurality of intermediate servers, and at least one managed access point router connected to that interfaces with a plurality of service networks, which are external to the high-speed access network infrastructure, the method comprising:

providing the plurality of intermediate servers to route local and non-local data packets within the high-speed access network infrastructure using only destination-based packet forwarding;

providing the at least one managed access point server to receive only non-local packets from the plurality of intermediate servers and to route the non-local data packets to the plurality of service networks using only source address-based policy routing;

assigning separate network addresses to customers of the high-speed access network infrastructure, each network address assigned based on subscriptions of the customers to the service networks, wherein the network addresses are assigned from lists of network addresses for each of the plurality of service networks;

routing local data packets at the plurality of intermediate routers within the high-speed access network infrastructure, based only on their destination address at the routers in the high-speed access network infrastructure except at one or more managed access point routers having connections to routers in the plurality of service networks;

routing non-local data packets from the intermediate routers to a managed access point router, based only on their destination address;

comparing the source addresses of the non-local data packets to the lists of network addresses allocated to subscribers of services provided by the plurality of service networks; and

routing the non-local data packets at from the managed access point routers router to a router of a service network, based only on their source address addresses, so that packets having only when the source addresses match network addresses from a list of network address allocated to subscribers of services provided by a service network will be forwarded to a router in the service network.

9. (previously presented) The method of claim 8 wherein packets between network access devices connected to the high-speed access network infrastructure are routed in the high-speed access network infrastructure using destination-based routing without being forwarded to the service network.

10. (previously presented) The method of claim 8 wherein the high-speed access network infrastructure provides access to local services.

11. (previously presented) The method of claim 10 wherein packets associated with the local services are routed in the high-speed access network infrastructure using destination-based routing without being forwarded to the service network.

12. (currently amended) The invention method of claim 8 wherein the source address addresses of the incoming packet is data packets are assigned to a network access device devices associated with ~~the subscriber~~ subscribers of services provided by the service ~~network~~ networks, wherein the subscribers are customers of the high speed access network infrastructure

13. (currently amended) The invention method of claim 8 wherein the service networks utilize the Internet Protocol and wherein the network addresses are Internet Protocol addresses.

14. (previously presented) The invention of claim 13 wherein the plurality of service networks are operated by different Internet Service Providers.

15. (previously presented) The invention of claim 13 wherein the plurality of service networks offer access to different Internet Protocol-based services.